

the average residence time in each autoclave was 2 hours. The first and second autoclaves were maintained at a temperature of 55° C. and 80° C., respectively. After completion of the reaction, 0.034 g of methanol, per long of the styrene/1,3-butadiene mixture, as a terminator was added to give a polymer solution. By the same procedures as described in Production Example 1, a small amount of conjugated diene rubber (rubber 3) was obtained. Molecular weight and other properties of rubber 3 are shown in Table 1.

DETD An autoclave equipped with a stirrer was charged with 4,000 g of cyclohexane, 150 g of styrene, 450 g of 1,3-butadiene and 10 milli-mole of tetramethylethylenediamine, followed by addition of 6.3 milli-mole of n-butyllithium to initiate polymerization at 50° C. When 10 minutes elapsed from the commencement of polymerization, a mixture of 50 g of styrene and 350 g of 1,3-butadiene was continuously added. After it was checked that the conversion reached 100%, 1.1 milli-mole of tetramethoxysilane was added and a reaction was conducted for 30 minutes. The highest temperature of a polymerization mixture was 80° C. After completion of the reaction, 10 milli-mole of methanol as a terminator was added to give a polymer solution. A small amount of rubber 5 was obtained from the thus-produced polymer solution. Molecular weight and other properties of rubber 5 are shown in Table 1.

DETD An autoclave equipped with a stirrer was charged with 4,000 g of cyclohexane, 150 g of styrene, 720 g of 1,3-butadiene and 2.6 milli-mole of tetramethylethylenediamine, followed by addition of 7.6 milli-mole of n-butyllithium to initiate polymerization at 40° C. When 40 minutes elapsed from the commencement of polymerization, 130 g of 1,3-butadiene was continuously added. After it was checked that the conversion reached 100%, 5.3 milli-mole of tin tetrachloride was added and a reaction was conducted for 5 minutes. Further, 4.8 milli-mole of N,N'-diethylethylene urea was added and a reaction was conducted for 20 minutes. After completion of the reaction, 20 milli-mole of methanol as a terminator was added to give a polymer solution. A small amount of rubber 6 was obtained from the thus-produced polymer solution. Molecular weight and other properties of rubber 6 are shown in Table 1.

=> FIL STNGUIDE

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
91.70	92.12

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
-2.34	-2.34

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FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 16:05:15 ON 26 DEC 2007

L1 2070 SEA ABB=ON PLU=ON (ELASTOMER? OR POLYDIEN? OR RUBBER?) (S) ((CY

S/N 10/756,386

L2 CLIC OR CYCLIZ? OR CYCLIS?) (6A) (VINYL OR DIEN? OR BUTADIEN?))
413 SEA ABB=ON PLU=ON (ELASTOMER? OR POLYDIEN? OR RUBBER?) (S) (TET
RAMETHYLETHYLENEDIAMINE OR TMEDA)
L3 18 SEA ABB=ON PLU=ON L1 AND L2
D L3 1-18 IBIB ABS
D L3 15 IBIB HIT
D L3 11 IBIB HIT
D L3 3 IBIB HIT

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FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 25 Dec 2007 (20071225/PD)

FILE LAST UPDATED: 25 Dec 2007 (20071225/ED)

HIGHEST GRANTED PATENT NUMBER: US7313828

HIGHEST APPLICATION PUBLICATION NUMBER: US2007294796

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FILE USPATOLD

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FILE USPAT2

FILE COVERS 2001 TO PUBLICATION DATE: 25 Dec 2007 (20071225/PD)

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COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.48

92.60

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

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0.00

-2.34

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